

In the United States Patent and Trademark Office

Southampton, PA 18966-4545

November 2, 2001 [note that filing was attempted on August 9, 2001 by FAXing to 703-746-4256]

**McLAUGHLIN APPLICATION FOR APPARATUS CLAIMS**

Assistant Commissioner of Patents,

Box Patent Applications-

Washington, DC 20231

Sir:

**WHY THIS APPLICATION MERITS EXPEDITED PROSECUTION AS IF IT WERE  
UNAMBIGUOUSLY ENTITLED FROM THE FIRST TO BE CALLED A  
DIVISIONAL APPLICATION**

This application has a specification identical to that of a pending application now in the Publications group because of a Notice of Allowability issued September 7, 2001. Such allowed pending application has method claims and is a CPA application filed July 6, 2001 derived from parent application 09/235,619<sup>8</sup>, filed 01/21/99. Dr. Sean Smith was the Examiner throughout the prosecution. He is in Group 3729, headed by Lee Young. The applicant and inventorship herein are identical to such parent and CPA cases. The claims which are effectively sought herein are identical to the apparatus claims which previously were sought in the CPA application. When the parent case was filed, it included both method claims and apparatus claims. Such original apparatus claims are resubmitted [to maximize similarity to parent case as filed] but are cancelled by a Preliminary Amendment substituting the apparatus claims that were in the CPA case when capitulating to the Examiner's erroneous requirement for cancellation of the apparatus claims.

Counsel cannot quote a class and subclass for the presently sought claims because Examiner Smith never make a conventional restriction requirement.

When the case was filed on Jan. 21, 1999, there were both method and apparatus claims. In each of four amendments, applicant argued for the allowability of both method and apparatus claims, never making any election between them. The Examiner did not then raise any issue about restriction. Then in the Final Rejection, Examiner Smith quite erroneously asserted that method claims had

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been elected, and required the cancellation of the apparatus claims in order to expedite a Notice of Allowability of the method claims. The restriction requirement was a baffling surprise feature in a Final Rejection. Legal authorities were cited in attacking the restriction requirement, but Examiner Smith repeated it in the response to the After Final amendment. It seemed wiser strategy to pay an extra filing and issue fee than to use appellate procedures involving delays, lawyer's time, etc. to try to overcome the hurdles arising from this baffling surprise. The client desired early issuance of a patent.

Because the present application benefits from the 01/21/99 filing date, it is tentatively designated as a **CONTINUATION APPLICATION**, even though it will probably be treated essentially as a **DIVISIONAL APPLICATION** after the issuance of the filing receipt with its class-sub-class Group designations. This case should be processed with great speed.

The documents for the application containing the apparatus claims were predominantly prepared in response to a telephone conversation with Examiner Sean Smith on Wednesday Aug. 9, 2001. The Examiner seemed adamant that if both method and apparatus claims were desired, it would be necessary to file a separate case for the apparatus claims, which he indicated could be done following the CPA procedure of FAXing the application to his new private FAS number 703-746-4256. Accordingly, Counsel filed what was intended to be this application by FAX on Aug. 9, 2001. Counsel did not send a form requesting a FAX reply because of Counsel's unawareness of the availability of the FAX-reply form. It was subsequent to Aug. 9, while browsing through the availability of Forms on line that Counsel discovered that there is a reply form for COA applications filed by FAX. Counsel is 85 years old, and has had as many as 9 patent applications pending, but is quasi-retired, and accordingly relies more upon guidance from the Examiner than some patent attorneys having a more active prosecution practice.

Counsel did phone Examiner Smith a few days after the FAXing and had oral confirmation that the FAX had been received and that the case was on file. Said FAX transmittal included the documents for paying the fee from the Deposit Account. When the filing fee was not routinely deducted from the Deposit Account, Counsel made a series of Status Inquiries, including leaving messages on the VoiceMail of Examiner Smith several times, inquiries at the Initial Examination

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section, and the like, every few weeks. Counsel's persistent inquiries to the Patent Office brought on Thursday, September 25 the surprising news that currently the Patent Office does not accept the filing of a Divisional Application by FAX. Such surprising news prompted counsel to communicate with the office of his Arlington, VA associate, Eric Scherlin. A week later, on Thursday, November 1, said office phoned to explain that efforts to obtain access to the CPA of 09/235,618 had been unsuccessful, so that the apparatus application could not easily contain documentary evidence concerning the filing by FAX on Aug. 9, 2001. Preparations for filing this application started immediately, but could not be completed until Friday, November 2, 2001.

Although the two patents will expire simultaneously under the 20 year term statute, counsel tried valiantly to seek simultaneous issue of the two patents. Prior to the 20 year term statutes, many courts were quite confused about "double patenting" as clarified in Stringham's book on Double Patenting. From 1937 onward, counsel particularly stressed the books about patent law by Stringham,. However, today Stringham is almost unknown to many patent professionals. Stringham had respect for many court decisions concerning some aspects of intellectual property law, but contempt for the amazing confusion about double-patenting. Some of those asinine decisions have never been explicitly overruled. Some of the double patenting decisions contain language connoting that the Patent Office cannot be accused of error and that only counsel for applicant can be blamed if any mistakes were made. The Stringham book on double patenting encouraged efforts to seek both simultaneous expiration and simultaneous issue to avoid raising double patenting issues. Modern decisions probably acknowledge that mere simultaneous expiration avoids all double patenting problems. The prosecution record establishes the intent to avoid any double patenting problem, including the effectiveness of counsel's commitment to perennial common ownership of the differently numbered patents. The record also clarifies that counsel became a part-owner of such patent property during the prosecution, and is a shareholder in the common assignee, a corporation having essentially no assets except such patent property.

Substantially all patentability issues have been decided because the method claims, throughout the prosecution, had apparatus limitations, and the apparatus claims feature method limitations. Now that Examiner Smith has made it necessary to deal with two patent applications

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instead of one, there is hope that the Patent Office can make an adequate search for the apparatus claims, but also recognize why there appears to be an appropriate basis for a First Action Notice of Allowability for the apparatus claims. The Examiner handling this case, after making a supplemental search, can essentially use Dr. Smith's statement as the reason for allowability. Counsel seeks a prompt and favorable action.

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Patent application of

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Title of the Invention: *Infra-red Laser Device And Method For Searching For Lost Item*

Schedule regarding Federally sponsored research: Inapplicable

Reference to Microfiche Appendix: Inapplicable.

*INSA*

## BACKGROUND

### Field of Invention

In some athletic games, such as golf, a playing device, such as a golf ball, is temporarily lost, so that one or more players must devote time to searching. Sometimes a golf ball is not found, thus adding to the expense of the sport. Golf balls are not extremely expensive. Few golfers care to spend large amounts of money for a retrieval system involving golf balls costing significantly more than conventional golf balls. The method and apparatus are also useful for searching for and retrieving creatures, experimentally launched model airplanes, or other items which might be temporarily lost.

### PRIOR ART

Horchler 3,782,730 uses a magnetically actuated switch to turn on or off a radio oscillator at the core of the golf ball, whose radio signal can be monitored by the player whenever the ball is temporarily lost.

Engimeier 5,423,549 employs a rechargeable battery and a system for electromagnetically transmitting energy to the battery charger, of a Horchler type of golf ball.

Little 5,626,531 employs a capacitance system which tags such ball whenever activated by the radiation from by the radiation from a Horchler-type of target-seeking monitor.

Kroll et al. 5,662,534 also uses a monitor sending out a series of pulses of radio beams, and analyzing the reflected radio waves. In Kroll et al., the golf ball features a generic reflector of such radio beams.

Valantino 5,132,622 employs a golf ball having a metal center and the combination of a

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metal detector and target-seeking scoop to retrieve a lost golf ball

Digital pulses of infra-red laser beams having a wave length of 1310 nm., are suitable for optical wireless systems over distances of a few kilometers, according to Heatley et al, IEEE Communications magazine, December, 1998, pp 72-82.

Although radar systems have been helpful in locating gigantic targets, their effectiveness with items as small as a golf ball have been unsatisfactory. Moreover, a golf ball containing significant mass of transmitter, tagging components, capacitors, etc. has flight characteristics which are dysfunctional. Around the world, the number of golfers, and the number of golf balls manufactured, has continued to climb, thus accentuating the long-standing need for a system for retrieving a temporarily lost ball. Similar problems occur with croquet balls and other sports paraphernalia. Model airplanes and creatures are sometimes temporarily lost, and are retrievable using the apparatus and method of the present invention.

#### SUMMARY OF INVENTION

In accordance with the present invention, a searcher utilizes a monitoring device emitting a laser beam of a particular wave-length, and the reflected light attributable to such laser beam is analyzed for identifying the target zone providing the most intense reflection, inasmuch as the item to be retrieved has been modified to preferentially reflect light when such laser beam reaches it. Earphones or a meter, or other appropriate indicating means, can be used in monitoring for the targeted zone having the temporarily lost golf ball or the like. The flight characteristics of the golf ball of the present invention are substantially identical to those of a conventional golf ball, because the ball of the present invention differs from a conventional golf ball only by reason of having, on its exterior surface, an appropriate hologram comprising components particularly reflecting a laser beam of predetermined wavelength. In the process of the present invention, a conventional golf ball [or other athletic paraphernalia such as a croquet ball or a model airplane or a creature] is cleaned and then is labeled [usually coated] with the material imparting the selective reflectivity for the laser beam of the preselected wavelength. The term "hologram" is employed for certain types of such selected reflectivity. After the athletic paraphernalia has been thus treated, a sufficient amount of the selected material remains on the item to selectively respond to the laser beam having the preselected wavelength. It has been estimated that even after a holgramized ball has been played

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for 180 holes, or ten rounds of golf, it might retain effective amounts of the hologram material. Some golf balls have a plurality of approximately hemispherical depressions which retain the selective reflectivity even when some of the outermost portions of the ball are dirty. Because the cost of coating the ball with the selective material is not prohibitive, a golf course can repeat the treatment for a ball after even 9 holes of use. Occasionally a freshly hologramized ball becomes excessively dirty and is not adequately responsive to the target-seeking monitoring system featuring the laser beam of predetermined wavelength. However, the dirt accumulated during normal golf games does not impair the effectiveness of the retrieval system of the present invention. The plastic film deposited in a depression of the golf ball can be molded to impart a hologram of the type responsive to the laser beam reaching such molded ridges having angles and spacing appropriate for the selected wavelength.

**DRAWING**

In the accompanying drawings, Fig. 1 is a flowsheet of the process of the present invention.

Fig. 2 is a schematic presentation of how a laser beam, upon encountering a golf ball having in its dimples an embossed hologram grating of 5 or 15 microns would reflect such laser beam to the monitoring device.

Fig. 3, is a schematic presentation of a monitoring device comprising an emitter of a laser beam of predetermined wavelength; a receptor measuring the reflected light attributable to such laser beam; an indicating means such as a meter having a visual display or an audio signal advising the searcher of the relative intensity of the reflected light attributable to such laser beam.

Fig. 4, is a schematic view of a golf ball having dimples or depressions.

Fig. 5 is a schematic view of angled ridges or grating embossed into the plastic coating of a dimple of a golf ball.

Fig. 6 is a schematic presentation of a searcher using a monitoring device and earphones to search for a temporarily lost golf ball, thus providing the golfer with audible clues about how accurately he has focused the monitoring device to target the temporarily lost golf ball.

Fig. 7 is a schematic view of a laser beam being reflected from a golf ball having an appropriate coating in its dimples.

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Fig. 8 is schematic view of an apparatus for embossing or molding a hologram grating in the coating in the dimples of a golf ball.

Fig. 9 is a schematic presentation of a conveyor system for electrostatically coating a golf ball.

**DESCRIPTION OF PREFERRED EMBODIMENTS**

**Example 1.**

A golf ball 11 having dimples 12 and bumps 13, and resembling that of Fig. 2 is cleaned and then positioned by a plurality of pins on a conveyor system 14 of Fig. 9. The ball is thus advanced through an electrostatic charging zone 15, shown schematically in Fig. 9, and then into a coating zone 16. Nozzles 17 direct a controlled amount of finely pulverized coating material [having the opposite electrostatic charge] toward the golf ball 11 in the coating zone 16 so that the coating material is applied uniformly to the to the golf ball 11. The coating particles are a blue pigment consisting of the chelated nickel formate derived from an aqueous solution of the tetra-ammonium salt of ethylene diamine tetra-acetic acid. As a result of the electrostatic attractions, an extremely thin film of the nickel pigment is deposited on the golf ball, the coating being sufficiently uniform that the flight characteristics of the coated ball are not impaired. Optionally, the uniformly coated ball can pass through a heating zone 18 in which the coating is more tenaciously bonded to the surface of the golf ball, and then through a cooling zone 19. After the ball has been thus processed, it is removed from the conveying system 14, and is ready for use.

During normal use, the ball performs essentially like a similar untreated ball. If, however, a player blunders, and hits a ball into a rough area where it is temporarily lost, the player utilizes a monitoring device 30 (Fig. 2). Such monitoring device 30, as shown in Fig. 3, includes a laser beam generator 31 sending a monochromatic laser beam of preselected wavelength from the monitoring device 30 through a central nozzle 32. A photoelectric cell 33 detects reflected light attributable to such laser beam, thus generating an electric signal which is amplified by an amplifier 34 for actuating an indicator 35 (Fig. 2) alerting the golfer about the intensity of the reflected laser beam. So long as the nozzle 32 directs the laser beam to general areas, only trivial amounts of reflection are indicated. However, when the player has the monitor's nozzle 32 directed at the temporarily lost ball, the indicator alerts the player that his targeting of the lost ball has started to be

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useful. On moving closer to the target, the intensity of the indicated reflection is greater. The closer the distance to the target, the more useful are the indications of accurate targeting. Thus a player could retrieve a temporarily lost ball having the coating adapted to reflect the pre-selected wavelength of laser beam. Such pre-selected wave length should ordinarily be 1310 nm, but either 1550 nm or 880 nm share with 1310 nm the ability to penetrate atmospheres containing moisture. Communication systems relying upon optical wireless employ digitalized pulses of laser beams, but target-searching laser beams are desirably continuous. The monitoring device 30 comprises a battery pack 36 energizing a power supply 37. A lens 38 focuses the reflected light onto the photoelectric cell 33.

Example 2

A blue cobalt pigment comprising phthalimide is dispersed as an emulsion in water, which is applied as a uniform film on the golf ball, which after drying, provides a film which does not impair the flight characteristics of the ball. A grating or ridges having angles is embossed or molded into the coating thus deposited in the dimples. However, such thin film provides excellent reflectivity of a laser beam having the wave-length responsive to such pigment. In quality control tests, the hologram coating is shown to be quite uniform. The flight characteristics of the coated ball match the flight characteristics of an uncoated ball. By using a hand held monitoring device 30 and earphones 35a, the player can identify a search zone for a temporarily lost ball, and move closer toward it with increasing accuracy of targeting such lost ball. Upon close proximity, the golf ball is visible, thereby permitting retrieval of such ball.

Example 3

A golf ball is dipped in a liquid imparting a thin film of a copolymer featuring vinylchloride. The thus coated ball is transferred to a molding press in which the copolymer film lining each dimple is embossed to provide a plurality of ridges having angles and spacing designed selectively to process a laser beam having a wave length of 1310 nm. Because such laser-responsive ridges are in the dimples, they are not disturbed by the normal use of the golf ball. In the event that such golf ball is temporarily lost, in the rough of a golf course, it can be located by directing a laser beam of 1310 nm toward the search area, and refocusing the monitoring device in response to the audio signals measuring the feedback from such laser beam.

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**Example 4.**

Each of a plurality of calves is provided with a jacket having a coating of material selectively responsive to a laser beam of 1310 nm, and allowed to roam in a pasture. By using the monitoring device emitting such a laser beam and measuring the intensity of the feedback, the monitoring device can be successively refocused a plurality of times for locating each of the wandering calves. The same technique is applicable to model airplanes, prisoners, children, and other items which might be temporarily lost.